5-1987

Comparative Instructor Attitudes Toward College Level English and Mathematics Experiences for Gifted High School Students

Bruce Vickers

COMPARATIVE INSTRUCTOR ATTITUDES TOWARD COLLEGE LEVEL ENGLISH AND MATHEMATICS EXPERIENCES FOR GIFTED HIGH SCHOOL STUDENTS

A Project

Presented to

the Faculty of the Department of Educational Leadership

Western Kentucky University

Bowling Green, Kentucky

In Partial Fulfillment

of the Requirements for the Degree

Educational Specialist

by

Bruce W. Vickers

May 1987

AUTHORIZATION FOR USE OF THESIS

Permission is hereby

☒ granted to the Western Kentucky University Library to make, or allow to be made photocopies, microfilm or other copies of this thesis for appropriate research or scholarly purposes.

☐ reserved to the author for the making of any copies of this thesis except for brief sections for research or scholarly purposes.

Signed Bruce Vicker

Date 5/24/87

Please place an "X" in the appropriate box.

This form will be filed with the original of the thesis and will control future use of the thesis.

COMPARATIVE INSTRUCTOR ATTITUDES TOWARD COLLEGE LEVEL ENGLISH AND MATHEMATICS EXPERIENCES FOR GIFTED HIGH SCHOOL STUDENTS

Recommended May 7, 1987
(Date)

Director of Project

Thomas L. Updike, Jr.

Earl W. Kruse

Approved May 28, 1987
(Date)

Dean of Graduate College

Acknowledgements

To my daughters,
Amy and Ann,
whose love,
understanding,and patience
made this project
possible.

COMPARATIVE INSTRUCTOR ATTITUDES TOWARD COLLEGE LEVEL ENGLISH AND MATHEMATICS EXPERIENCES FOR GIFTED HIGH SCHOOL STUDENTS

Bruce W. Vickers May 1987 57 pages
Directed by: S. Schnacke, T. Updike, and C. Kreisler
Department of Educational Leadership Western Kentucky University

Samples derived from a mailed questionnaire were compared. The sample represented high school, community college and university instructors of mathematics and English. The Kentucky public schools sampled were equally represented among high school, community colleges and universities. The research indicated that of those instructors sampled a very high percentage (97.7%) feel that those high school students shown to be academically gifted would benefit from a college experience before high school graduation. The attitudes of those instructors sampled indicated that multiple criteria--grades, recommendations, standardized test scores and personal interview--were considered the preferred method of selection (82.5%). The attitudes sampled suggested that the high school personnel were better suited to make these eligibility decisions (67.4%).

The sampled attitudes concerning the setting of this experience suggest the community college was the preference over the university. By use of Chi-square tabulations, no significant difference between mathematics or English instructor's attitudes was shown. Using this method of

measurement significant attitude differences were shown depending on the group sampled. The attitudes of the three sampled groups did show variation depending upon the question involved. Issues such as eligibility of the students, location of experience, use of credit earned, choice of instructor, distance to the experience and responsibility for administrative costs were considered. The collected attitudes suggested that an academically gifted high school student would benefit from a college level experience before graduation and that there is a real need for change in our educational system to accommodate our most precious resource--the gifted student.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

There currently exists a sizeable gap in our total educational system. The present system rarely allows a student identified as gifted to proceed at his or her own rate or pace. This fact might be considered a waste of our most important natural resource--the intelligence of our most promising young people. Clark (1983) states that to retain giftedness, not to mention furthering the potential, gifted children must participate in programs appropriate to their level of development.

According to Clark (1983), "It is undemocratic to refuse to allow gifted children the right to educational experience appropriate to their level of development." Thomas Jefferson is known to have said, "There is nothing more unequal than equal treatment of unequal people." Terman (1925) found that there is physical and psychological pain in being thwarted, discouraged, and diminished as a person. To have ability to feel power you are never allowed to use can become traumatic if continued. There is continual reference to "elitism" if a special program is offered; but we continue to have special programs for athletics, drama and music. The feeling of "elitism" has been found (Gallagher, 1966) to be more

suspected than actual. Gifted programs improve social relations and provide the gifted with better attitudes toward themselves and others.

The gifted students feels isolation, for others consider them different. When the roots of a poor self-concept become established, the school often does nothing, for its curriculum and organization are not sufficiently structured (Clark, 1983). Gifted students need an environment of unlimited learning. We as a society suffer when gifted students do not receive a satisfying, challenging, fulfilling school experience. This need is not being met by our lock-step approach to education (i.e., K-12, college, graduate).

The educators of the gifted students have a very important task. As instructors they must be aware of the special needs of the gifted student. The opinions of a selected group of these instructors have been selected for use in this project.

Purpose

Investigated in this study were the attitudes of high school instructors, community college instructors, and university level instructors with regard to the feasibility and appropriateness of college level academic experiences for academically gifted high school students. This project represents an attempt to show the feelings of those instructors most likely to be associated with academically gifted students. This information and the conclusions drawn from it indicate that a legitimate need for a change in our

educational system exists today. Results of this research project and other research documents in this area show that a needed change in our present system exists. This change will come by legislative action initiated by instructors, parents and the gifted students themselves.

Statement of the Problem

Specifically the study:

1. Access the attitudes of high school instructors of English and mathematics with regard to the feasibility and appropriateness of college level experiences for academically gifted high school students.
2. Access the attitudes of community college instructors of English and mathematics with regard to the feasibility and appropriateness of college level experiences for academically gifted high school students.
3. Access the attitudes of university instructors of English and mathematics with regard to the feasibility and appropriateness of college level experiences for academically gifted high school students.
4. Access if there is a difference in attitudes with regard to feasibility and appropriateness between English and mathematics instructors at the high school, community college and university level.
5. Access if the actual miles to be traveled for the

students's experience is a factor effecting the instructor's attitude of appropriateness and feasibility.

6. Access the attitudes of high school, community college and university instructors to eligibility and selection of gifted high school students for a college level experience.
7. Access the attitudes of high school, community college and university instructors with regard to the use of the college credit earned in such an experience.
8. Access the attitudes of high school, community college and university instructors with regard to administrative costs of a college level course.

Limitations of the Study

The conclusions and recommendations of research work is only as accurate as the data collected. The sample of forty-eight responses must constantly be kept in mind when these limited data are tabulated. This sample is too small to be used to show sweeping trends or generalities. There also exists, by design, a regional emphasis of the data. The entire study was conducted within the state of Kentucky. It would be erroneous to suggest these conclusions could be extrapolated for use in other states or regions, since only Kentucky public schools were sampled. It is difficult to obtain comprehensive and complete feelings and attitudes on such a complicated issue with only ten questions. The number and types of

questions were selected because the researcher felt that a high percentage of responses was needed for the data.

A short, precise questionnaire was used to ensure a high percentage of returns. This questionnaire is referred to as the G.A.Q. or the Gifted Attitude Questionnaire.

Definition of Terms

The following terms are used in the study. The terms and definitions are as follows:

1. academically gifted - possessing specific academic aptitude beyond the norm, are consistently superior in achievement in one or more academic areas to other pupils at the same age level to the extent that, they needed profit from advanced content studies of both greater depth and more rapid acceleration (Guidelines: Kentucky Gifted Education Programs, Revised, 1984)

2. advanced placement - placement in a college level course before a high school diploma is received, not to be confused with the Advanced Placement Program (AP) sponsored by the College Board

3. attitude - a mental position with regard to a fact or state, a feeling or emotion toward a fact or state

4. community college - a publicly supported two-year college offering college and vocational courses leading to associate degrees or certification

5. Gifted Attitude Questionnaire (G.A.Q.) - a ten item quesitonnaire used to elicite attitudes used in this project (See Appendix A)

6. high school - a publicly supported secondary school, leading to a diploma

7. marginal notes - any responses on the G.A.Q. that were not answers to the specific ten questions listed

8. public school - those schools supported by legislative funds, i.e. not parochial or private

9. "shadow politics" - the belief that different degrees of professional respect are rendered to members of precollegiate and collegiate education by the American public; a supposed lack of university understanding of what is necessary to instructing and developing precollegiate youth; the belief that university persons will summarily disregard the intellectual and pedagogical contribution of precollegiate teachers in a school-college partnership; the belief that a college's involvement in a school-college partnership can be attributed only to economic motivations, that is, robbing the cradle to meet financial needs at the university (Durden, 1985) (See Chapter II page 12)

10. university - a publicly supported four-year institution granting college credit and at least baccalaureate degrees.

CHAPTER II

LITERATURE REVIEW

The literature used was compiled with the use of Western Kentucky University's Graduate Library. A computer ERIC search was used for related articles. Three separate letters were also sent to the following:

Duke University
Talent Identification Program
West Duke Building
Durham, NC 27708

Attention: Dr. Paul J. Brounstein
Director of Research

Johns Hopkins University
Study of Mathematically Precocious Youth
30 Shriver Hall
Baltimore, MD 21218

Attention: Dr. Julian C. Stanley
Director

The College Board
45 Columbus Avenue
New York, NY 10023-6917

Attention: Harlan P. Hanson
Director Advanced Placement
Program

All literature reviewed was obtained from the Western Kentucky University Library and these listed sources.

Definition and Selection Problems

"Some have brains, and some haven't, he says and there it

is." Winnie-the Pooh (Milne, 1926). The selection in our educational system is not quite that simple.

Since the definition of what is gifted is so vague, the accurate determination of their numbers is nearly impossible. The historical definitions of high test scores on intelligence tests are a passing trend. Even with this uncertainty it is still thought that three to five percent of the population can be termed gifted (Correll, 1978). Of this percentage 10 to 20% will be high school dropouts, many more never attend college. Many more will be neglected because of inadequate facilities and faculty. Fifteen million public school children live in rural areas and of that number probably 500,000 to 750,000 are gifted (Anderson, 1979).

The Federal Government, which is responsible for funding, even has multiple definitions (Nadel, 1978) and (NAIS, 1978). Identifying the gifted by I.Q. scores is also vague: 115-200 with 137 and above highly gifted (Vida, 1978); 132 and above (Gregory, 1979). It seems that the best criteria for identification are multiple sources rather than relying solely on one instrument of measurement, (Gregory, 1979) (Peters, 1978) and (Anderson, 1979). Things to consider might be early reader (Labuda, 1968), teacher, observation, peers nomination, parents, authorities who know students, case studies, creativity tests (Anderson, 1979), test scores (Vida, 1978), eager to do new things, sensitive to feelings (NAIS, 1978) and the list is unending. It has been found that in certain situations peers are better selectors than are teachers

(Doughty, 1965). In one study the students volunteered, thus selecting themselves as at least possible candidates for a program (Perlini, 1978). No one child has all the listed traits but can display a wide variety (NAIS, 1978). A student might be gifted in one area and average in another (Beard, 1977).

Definition of Gifted for the Commonwealth of Kentucky Guidelines: Kentucky Gifted Education Programs, Revised (1984)

Gifted children and youth are those who by virtue of outstanding abilities are capable of high performance and leadership and who have been identified by professionally qualified persons. These are pupils who require qualitatively differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize self-fulfillment and to maximize their contribution to society.

For the purposes of state gifted education funding, gifted children and youth are defined as those pupils who have demonstrated achievement or potential ability in intellectual and/or academic areas, in creativity, and/or in the visual and performing arts. These pupils may be more clearly defined by the following statements:

1. children and youth possessing general intellectual ability beyond the norm are consistently superior in mental capacity to other pupils at the same age level;
2. children and youth possessing specific academic

aptitude beyond the norm are consistently superior in achievement in one or more academic areas to other pupils at the same age level to the extent that they need and profit from advanced content studies of both greater depth and more rapid acceleration;

3. children and youth possessing exceptional creativity consistently engage in divergent approaches to conventional tasks as evidenced by innovative or creative reasoning ability, ability in problem solving, imagination, and advanced insight; and;
4. children and youth possessing exceptional ability in the visual and performing arts demonstrate outstanding aesthetic production or creativity in the areas of art, dance, music, drama, speech and in activities requiring possession of exceptional gross or fine manipulative and motor skills proceeding from mental stimuli (Kentucky Department of Education, 1984 p. 2-3).

Instructor Attitudes

In the book Conceptions of Giftedness the editors state, "Giftedness is arguably the most precious natural resource a civilization can have." (Sternberg & Davidson, 1986). This natural resource is not being utilized to its utmost potential. One of the remedies often proposed is a closer working relationship between schools and colleges. The problem is not the students but the structural difficulties in our American educational system. Often the last two years of high

school and the first year of college are repetitions (Durden, 1985).

It has been found that there is a declining motivation and boredom, particularly among seniors planning to enter college. Alternatives to "senioritis" can be approached from basically three directions (Gaines, 1985):

1. the student goes to campus
2. the college instructor goes to the high school
3. some form of advanced placement and/or credit is given by examination.

This research project involves number one above, the student goes to campus, especially with regard to the attitudes of the instructors that would be involved.

Research indicates that there is a very high demand for college credit alternatives. The explosive increase in Advance Placement Examinations is a good indicator. In 1961, 17,603 AP Examinations were given; by 1986, 319,224 Examinations were given in twenty-four subjects (College Board, 1986). The College Level Examination Program (CLEP) member participants have suggested a 60% increase in new areas to be tested (CLEP, 1986). More and more colleges and universities have accepted the principle that college-level learning, however acquired, should be credited toward a degree; and they have sought various ways of validating such college-level achievements (College Board, 1978).

There are many well established programs in which gifted students are enrolled in college courses before graduation.

These can be offered in summer courses like The University of Maryland's Short Courses for Academically Talented Students (Daly, 1985). There also can be a combining of the last two years of high school with two or four years of college (Daly, 1985). The work at Johns Hopkin's University with young entrants (Stanley, 1982) proves that college work can be done by younger students and that it can be done extremely well.

As these and similar programs expand, the research data is compiled and participants become more numerous, teachers' attitudes will follow. Teacher attitude change (Guskey, 1986) takes place primarily after some change in student learning has been evidenced. Since idealism is an important component of a successful teacher (Calabrese & Anderson, 1986) the real point to consider is not whether changes should be made for gifted students but how to implement these changes that do not fit into our American system.

In his work, New Directions for Teaching and Learning, (1985), Durden found the following:

> However, school-college partnerships, while they can appear to be enticing methods to improve the quality of American education, are not always so easily created or maintained. Any dialogue between disparate levels of the American educational system can automatically bring into play the "shadow politic" of our educational ethos: the belief that different degrees of professional respect are rendered to members of precollegiate and collegiate

> education by the American public; a supposed lack of university understanding of what is necessary to instructing and developing precollegiate youth; the belief that university persons will summarily disregard the intellectual and pedagogical contribution of precollegiate teachers in a school-college partnership; the belief that a college's involvement in a school-college partnership can be attributed only to economic motivations, that is, robbing the cradle to meet financial needs at the university. This shadow politic is a powerful reality. It must be kept clearly in mind and confronted directly by anyone wishing to undertake a collaborative project. (Durden, 1985, p. 38)

This project represents an attempt to research the attitudes of a sample of those instructors involved with this problem. No published articles on this specific topic are presently available. A very few articles did mention instructors attitudes; but this area has as yet very little published data. The reasearcher received a reply letter from Paul J. Brounstein, Ph.D. Dr. Brounstein is active in the Talent Identification Program at Duke University. In a letter to the researcher it was stated, "You should begin your effort knowing that the literature on the topic is virtually nonexistant."

CHAPTER III

PROCEDURE

The Instrument

The data collected were obtained by a mailed questionnaire. A copy is included in Appendix A. This questionnaire was developed by the researcher with the aid of Drs. S. Schnacke, T. Updike and C. Kreisler of Western Kentucky University, who helped with clarification and wording of the instrument. The questionnaire was designed so that the cover letter and completion of the questionnaire could be done easily and rapidly. This ease was to enhance the likelihood of a high percentage of returned documents.

The questionnaire, G.A.Q. see Appendix A, had ten items to be answered. Question number one was used to determine the instructors discipline, English or mathematics, and also the institution of employment, high school, community college or university. This question placed the responses in the appropriate catagories for comparisons. The questionnaires were also coded before mailing to ensure that there would be no clerical mistakes in mailing.

Questions two, five and seven dealt with attitudes concerning appropriateness and feasibility of gifted high school students in a college level course. These questions

dealt with attitudes concerning the benefit to the student, the appropriate setting and the appropriate instructor.

Questions number three and four dealt with the attitudes concerning criteria for eligibility of gifted high school students and attitudes concerning personnel deciding eligibility of gifted high school students, i.e., attitudes concerning how gifted students are to be selected and attitudes concerning who does this selecting.

Question number six dealt with attitudes concerning how the earned credit was to be used. The choices were high school diploma requirements, college degree requirements, both high school diploma and degree requirements or student's choice.

Question numbers eight and nine dealt with attitudes concerning distance as a factor and attitudes concerning the maximum traveled distance, i.e., attitudes concerning distance a factor and the maximum distance that is feasible.

Attitudes concerning the responsibility of administrative costs were considered in question number ten. After question ten was a statement "Yes, I would like a copy of the research summary." This was not used as data for the research project but was considered in Marginal Notes and Comments in Chapter IV DATA ANALYSIS AND INTERPRETATION.

The Sample

Due to the number of high schools, community colleges and universities the sample was selected using the following criteria:

a. All schools sampled were located in the state of

Kentucky.

b. Only public institutions were sampled.

c. All eight four-year universities were sampled.

d. Eight community colleges were selected that are not in the same county as one of the eight universities. However consideration of geographic location was given so that factors such as urban, small town, rural, east, west, north, south were all represented.

e. Eight high schools were selected from counties which adjoin a county having a university or a community college. Of these, four adjoin counties having a university and four adjoin counties having a community college. The selection was by random draw.

f. English and mathematic department heads or chairpersons were determined by college catalogues or by telephoning the institution.

The total sample was distributed in the following numbers:

8 high schools (8 English instructors, 8 mathematics instructors)

8 community colleges (8 English instructors, 8 mathematics instructors)

8 four-year universities (8 English instructors, 8 mathematics instructors)

This sample provided forty-eight questionnaires distributed evenly among four-year universities, community colleges and high schools.

Collecting the Data

Forty-eight pre-posted questionnaires with cover letters (See Appendix B) were mailed; thirty-nine responses were received within two weeks. A follow-up letter (See Appendix C) was sent two weeks after the initial mailing. A follow-up telephone call (See Appendix D) was made two weeks later, i.e. one month after initial mailing. Using this procedure, forty-five of the forty-eight questionnaires were used for research data. All data were collected between the Thanksgiving holiday and Christmas holiday. The researcher felt that this school period was the best time to mail to ensure a high percentage of responses.

Summary of Procedures

The forty-eight questionnaires, divided evenly among high school English and mathematics instructors, community college English and mathematics instructors and university English and mathematics instructors were mailed to selected institutions. These questionnaires were sent to instructors employed by public institutions within the state of Kentucky.

The resulting data were developed from the collected forty-five instruments. This 93.75% was considered adequate for this study.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Chapter Overview

The Gifted Attitude Questionnaire (G.A.Q.) was used to complete all the data considered in this project. Each of the ten questions on the G.A.Q. was considered individually using percentage calculations.

Questions three, five, seven and ten were considered using percentages and also Chi-Square and Phi Coefficient tabulations. Extraneous marks and also the rate of the G.A.Q. return were tabulated. These marks and the rate of return were not included in the original design of the project. The researcher, after the designed tabulations were completed, felt that the rate of return and the extraneous marks were noteworthy.

All data used were compiled from the forty-five questionnaires answered and returned. All comments in margins were noted but not used to complete the data. These comments will be considered in Marginal Notes and Comments beginning on page 37. If some individual questions were left unanswered they were not considered in the tabulations. The totals compiled represent the percentages of those questions answered completely and correctly. If a question was answered with a

multiple answer (e.g. answers a. and b. both circled) the answer was discarded and treated as an unanswered question. If a response was clearly marked by a line or check mark, it was used as data even though the instructions on the mailed questionnaire (G.A.Q.) stated "please circle." All percentages were rounded off to the nearest tenth of one percent. All Chi-square and Phi Coefficient measurements were rounded off to the nearest third decimal place.

The forty-five replies used represent 93.8% of the questionnaires (G.A.Q.'s) mailed. Each group, i.e. high school, community college and university instructors, had fifteen of a possible sixteen returned. The result was a 93.8% return rate of each sampled group. The unanswered high school G.A.Q. was from an English instructor. The unanswered community college G.A.Q. was from a mathematics instructor. The unanswered university G.A.Q. was from an English instructor (See Table 1). Of these three, the high school English instructor and the university English instructor did not respond with the initial mailing, the follow-up mailing and were not available for contact by telephone. The community college mathematics instructor did not respond to the initial mailing, the follow-up mailing and refused to answer by phone upon contact.

Analysis and Interpretation

A summary of the raw score responses is available in Table 1, and a complete copy of the G.A.Q. is shown in Appendix A. To determine the appropriateness and feasibility

Table 1

Summary of Response Totals Utilized in Analysis and Discussion*

1.	a.	7	
	b.	8	
	c.	8	
	d.	7	
	e.	7	
	f.	8	
2.	Yes	43	No 1
3.	a.	4	
	b.	2	
	c.	1	
	d.	0	
	e.	33	
4.	a.	29	
	b.	14	
5.	a.	22	
	b.	20	
6.	a.	6	
	b.	10	
	c.	19	
	d.	8	
7.	a.	4	
	b.	15	
	c.	25	
8.	Yes	33	No 11
9.	0 - 5		2
	6 - 10		3
	11 - 15		8
	16 - 20		8
	21 - 25		9
	more than 25 but less than 50		9
	more than 50 miles		0
10.	a.	22	
	b.	20	

*Appendix A has a complete copy of the G.A.Q.

of a college experience, questions two, five and seven were considered (See Table 2). The data indicated a very strong response that the student would benefit from a college level experience while still in high school. With 97.7% of those responding answering, yes, . . . beneficial to student . . . the Chi-square of 1.974 and the Phi Coefficient of .207 (See Table 3) indicated that the correlation for this sample was not significant at the .05 level. With at least 95% accuracy, it can be assumed that there was no significant correlation among the variables sampled (high school instructors, community college instructors and university instructors).

The responses to question five . . . appropriateness of setting . . . (See Table 2) were more varied than the responses to question two. The high school and community college instructors responding agreed nearly four to one (78.6% to 21.4%) that the community college was the most appropriate setting. The university responses were totally (100%) for the university setting. These differences in responses implied that the "shadow politic," noted in the Definition of Terms and also mentioned in Chapter II LITERATURE REVIEW, was a factor when considering the most appropriate setting for college courses offered to gifted high school students.

With a Phi Coefficient of .596 (See Table 3) there was a significant correlation. This Chi-square data of 23.101 suggests that the responses tabulated were more likely to vary positively, depending upon the instructor's institution of

Table 2

. . . Percent of Responses Used to Access the Appropriateness and Feasibility of a College Experience . . .

	% High School	% Community College	% University	% Total Responses
Question 2 (a)				
... beneficial to student ... (Yes)	100.0	100.0	93.3	97.7
Question 5 (b)				
... appropriateness of setting ...				
a. community college	78.6	78.6	0.0	52.4
b. university	21.4	21.4	100.0	47.6
Question 7 (c)				
... source of instructors ...				
a. high school	13.3	7.1	6.7	9.1
b. college	20.0	35.7	46.7	34.1
c. either	66.7	57.1	46.7	56.8

(a) n = 14 High School, n = 15 Community College, n = 15 University
n = 44 Total Responses

(b) n = 14 High School, n = 14 Community College, n = 14 University
n = 42 Total Responses

(c) n = 15 High School, n = 14 Community College, n = 15 University
n = 44 Total Responses

Table 3

Chi-Square and Phi Coefficient Results
for Questions Two, Five, Seven and Ten

Comparison:
Instructors Attitudes by Institution of Employment
(High School, Community College and University)
Questions 2, 5, 7 and 10 of G.A.Q.

	Chi-Square (x^2)	Phi Coefficient (c)	Degree of Freedom (df)
Question 2 (a) ... beneficial to student ...	1.974	.207	2
Question 5 (b) ... appropriateness of setting ...	23.101	.596*	2
Question 7 (c) ... source of instructor ...	5.182	.105	4
Question 10 (d) ... administrative costs ...	1.439	.190	2

With a degree of freedom (df) of 2, a Chi-square with a value of 6.0 or larger is significant at the .05 level.

With a degree of freedom (df) of 4, a Chi-square with a value of 9.5 or larger is significant at the .05 level.

The Phi Coefficient gives a numerical value, ranging from 0 to +1, for that relationship.

(a) n = 14 High School, n = 15 Community College, n = 15 University Responses
(b) n = 14 High School, n = 14 Community College, n = 14 University Responses
(c) n = 15 High School, n = 14 Community College, n = 15 University Responses
(d) n = 12 High School, n = 14 Community College, n = 13 University Responses

*Significant at the .05 level - This question was the only one to show a significant positive correlation using Phi Coefficient tabulations.

employment. These Chi-square data were significant at the .05 level. Of the four questions considered with the Chi-square and Phi Coefficient tabulations (i.e., questions two . . . would a student benefit, five . . . appropriateness of setting, seven . . . source of instructor, and ten . . . responsibility for administrative costs, of G.A.Q.) question number five was the only one to show a significant positive correlation at the .05 level. These answers suggested that the groups responded as to their institution of employment. High school and community college responses implied the community college would be the most appropriate setting while the university responses implied that the university was the most appropriate setting.

Question number seven (See Table 2), dealing with the . . . level of employment of instructor . . ., suggested that over half (56.8%) the responses indicated either a qualified high school or a qualified college instructor would be appropriate. The responses that indicated a preference favored the college instructor over the high school instructor, three to one (34.1% to 9.1%). It should be noted in question number seven how each group defended their institution of employment, two thirds (66.7%) of the high school instructors responded that either would be appropriate while less than half (46.7%) of the college instructors responded that either would be appropriate.

With a Phi Coefficient of .237 (See Table 3) there was no significant correlation. The Chi-squared value of 2.621 (See

Table 3) suggests that there was no positive correlation at the .05 level, further suggesting that those instructors who responded answered independently of their group of employment. Any variation was considered too small to be significant with those sampled.

To determine if there was a difference in attitudes between mathematics and English instructors, Tables 4, 5 and 6 were compiled. Table 4 indicated how the responses were distributed throughout each institutional setting. Table 5 compares the total responses offered by mathematics and English instructors. Table 6 gives the Chi-squared and Phi Coefficient Results. Both disciplines expressed a very strong response to question number two, . . . beneficial to student . . ., the differences compared to the total sample was minimal. The Chi-squared value of 1.023 with a Phi Coefficient of .1525 is not significant at the .05 level. The mathematics instructors' responses did show a preference to the community college as to . . . appropriateness of setting . . . expressed in question number five. The Chi-squared data (Table 6) indicate that this preference was not large enough to be significant. The differences in responses corresponds more to the institution rather than the discipline. In other words, high school, community college and university instructors respond more alike relative to their institution of employment rather than the discipline of mathematics or English, e.g. high school mathematics instructors reply more similar to other high school instructors than to community college or

Table 4

Comparison of High School, Community College and University Responses on G.A.Q.
(% by Institutional Setting Sampled)

	% High School	% Community College	% University	% Total Responses
Question 2 (a)				
... beneficial to student ... (Yes)				
Mathematics	57.1	46.7	46.7	48.9
English	42.9	53.3	46.7	47.7
Question 5 (b)				
... appropriateness of setting ...				
a. community college				
mathematics	87.5	100.0	0.0	60.9
English	66.7	57.1	0.0	42.1
b. university				
mathematics	12.5	0.0	100.0	39.1
English	33.3	42.9	100.0	57.9
Question 7 (c)				
... source of instructor ...				
a. high school instructor				
mathematics	12.5	0.0	0.0	4.3
English	14.3	14.3	14.3	14.3
b. college instructor				
mathematics	25.0	42.9	62.5	43.5
English	14.3	28.6	28.6	23.8
c. either				
mathematics	62.5	57.1	37.5	52.2
English	71.4	57.1	57.1	61.9

(a) n = 14 High School, n = 15 Community College, n = 15 University
n = 44 Total Responses

(b) n = 14 High School, n = 14 Community College, n = 14 University
n = 42 Total Responses

(c) n = 15 High School, n = 14 Community College, n = 15 University
n = 44 total Responses

Table 5

Comparison of Mathematics Instructors and English Instructors Attitudes on the G.A.Q.
(% of Total Sampled)

	Mathematics (% of Total Responses)		English (% of Total Responses)		Total % Responses (Table 2)
Question 2 (a)					
... beneficial to student ... (Yes)	50.0	+	47.7	=	97.7
Question 5 (b)					
... appropriateness of setting ...					
a. community college	33.3	+	19.0	=	52.4
b. university	21.4	+	26.2	=	47.6
Question 7 (c)					
... source of instructor ...					
a. high school instructor	2.3	+	6.8	=	9.1
b. college instructor	22.7	+	11.4	=	34.1
c. either	27.3	+	29.5	=	56.8

(a) n = 22 Mathematics, n = 22 English, n = 44 Total Responses
(b) n = 23 Mathematics, n = 19 English, n = 42 Total Responses
(c) n = 23 Mathematics, n = 21 English, n = 44 Total Responses

Table 6

Chi-Square and Phi Coefficients on Selected Questions
by Academic Discipline

Comparison:
Instructor Attitudes by Academic Discipline of Employment
(English and Mathematics)
Questions 2, 5, 7 and 10 of G.A.Q.

	Chi-Square (x^2)	Phi Coefficient (c)	Degree of Freedom (df)
Question 2 (a) ... beneficial to student ...	1.023	.1525	1
Question 5 (b) ... appropriateness of setting ...	1.459	.187	1
Question 7 (c) ... source of instructor ...	2.621	.237	2
Question 10 (d) ... administrative costs ...	2.917	.2735	1

With a degree of freedom (df) of 1, a Chi-square with a value of 3.8 or larger is significant at the .05 level.

With a degree of freedom (df) of 2, a Chi-square with a value of 6.0 or larger is significant at the .05 level.

The Phi Coefficient gives a numerical value, ranging from 0 to +1, for that relationship.

(a) n = 22 English, n = 22 Mathematics Responses
(b) n = 19 English, n = 23 Mathematics Responses
(c) n = 21 English, n = 23 Mathematics Responses
(d) n = 18 English, n = 21 Mathematics Responses

university mathematics instructors. The level of instruction was more of a factor than the discipline being taught.

To discover if actual miles traveled was a factor affecting the attitudes of appropriateness and feasibility, questions eight and nine were considered (See Tables 7 and 8). Over three quarters (75.6%) of those responding indicated that distance traveled was a factor. The high school instructors and the community college instructors who responded indicated that distance was more of a factor than did those university instructors who responded. Considering the three percentages for high school 86.7%, community college 80.0%, and university 60.0%, the data indicated that those working closely with the high school students consider it more of a factor. Using these data, the older a student becomes the less likely distance is to be a factor. The mean maximum distance to be traveled routinely as expressed in question number nine was 20.7 miles (See Table 8). The data in question eight would seem to imply the exact opposite of question nine. Even though the high school instructors' responses considered . . . yes, distance a factor . . . 86.7%, the responses to question nine gave the highest mean distance, 24.8. Also the university responses gave the lowest maximum distance of 20.7 but showed that distance . . . yes, distance a factor . . . to be the lowest of all three groups. This seemingly apparent discrepancy may be attributed to the wide range of choices given and the size of the sample used.

To determine the attitudes of high school, community

Table 7

. . . Accessing Attitudes Concerning the Distance
From the Student's Residence to the Place of Instruction . . .

	% High School	% Community College	% University	% Total Responses
Question 8 (a)				
... yes, a factor ...	86.7	80.0	60.0	75.6

(a) n = 15 High School, n = 15 Community College, n = 15 University
n = 45 Total Responses

Table 8

. . . Accessing Attitudes Concerning the Mean Maximum Distance to be Traveled in Miles. . .

	% High School	% Community College	% University	% Total Responses
Question 9 (a)				
... maximum distance ...	24.8	20.4	16.7	20.7

(a) n = 13 High School, n = 14 Community College, n = 12 University
n = 39 Total Responses

college, and university instructors with regard to eligibility and selection, questions three and four were considered. The multiple criteria, expressed as . . . "e." all of the above, was the overwhelming preference (See Table 9). All three groups, high school instructors, community college instructors, and university instructors, were clustered closely together with 82.5% of the total replies responding to . . . all of above . . . as a multiple criteria for selection.

The responses to which group, high school or college personnel, is better qualified to determine eligibility was not as unified. This qualification to determine eligibility was expressed in question number four (See Table 9). The high school responses were very much in favor of the high school personnel making the selection (92.9% of high school responses). The community college responses (50.0%) and the university responses (60.0%) were more evenly divided.

To resolve the attitudes concerning how the earned credit was to be used question number six was considered. The response occurring most often (44.2%) indicated that credit should be used for both a high school diploma and also for degree requirements. The high school responses did indicate a slight preference for degree requirements (See Table 10).

Question number ten was considered to determine the attitudes for which organization would be responsible for administrative costs. Although the responses were about evenly split - 59.0% to 41.0% (See Table 11) - the community college responses strongly favored (71.4%) the college system being

Table 9

. . . Accessing Attitudes Concerning Eligibility and Selection of Students . . .

	% High School	% Community College	% University	% Total Responses
Question 3 (a)				
...eligibility based on:				
a. grades	15.4	7.1	7.7	10.0
b. recommendations of high school instructors	0.0	7.1	7.7	5.0
c. standardized test scores (e.g. ACT, SAT)	0.0	7.1	0.0	2.5
d. personal interview	0.0	0.0	0.0	0.0
e. all of above	84.6	78.6	84.6	82.5
Question 4 (b)				
... better qualified to determine eligibility:				
a. the high school personnel	92.9	50.0	60.0	67.4
b. the college personnel offering the course	7.1	50.0	40.0	32.6

(a) n = 13 High School, n = 14 Community College, n = 13 University
n = 40 Total Responses

(b) n = 14 High School, n = 14 Community College, n = 15 University
n = 43 Total Responses

Table 10

. . . Accessing Attitudes for the Possible Use of Earned Credit . . .

	% High School	% Community College	% University	% Total Responses
Question 6 (a)				
... credits applied to ...				
a. high school diploma	20.0	0.0	21.4	14.0
b. college degree	40.0	7.1	21.4	23.3
c. both	26.7	57.1	50.0	44.2
d. student's choice	13.3	35.7	7.1	18.6

(a) n = 15 High School, n = 14 Community College, n = 14 University
n = 43 Total Responses

responsible for the administrative costs (See Table 11). Question ten received the highest number of comments of any question used. This will be considered in Marginal Notes and Comments that follows.

To determine if . . . administrative costs . . . question ten, varied with the institutions of those sampled a Chi-square and Phi Coefficient were calculated (Table 3). The Chi-square at 1.439 with a Phi Coefficient of .190 indicated that there is not a significant correlation with respect to the institutions considered. This data is at the .05 level.

To decide if . . . administrative costs . . . question ten varied with the disciplines, i.e. English and mathematics, another Chi-square and Phi Coefficient were calculated (Table 6). With a Chi-square of 2.917 and a Phi Coefficient of .2735, it was found that, at .05 level, there is not a significant degree of correlation.

The distribution of responses was tabulated in Table 1 - Response Totals. These were the raw scores used for tabulation. A complete copy of each individual question is available in Appendix A.

Table 11

. . . Accessing Attitudes Concerning the Organizational System Responsible for Administrative Costs . . .

	% High School	% Community College	% University	% Total Responses
Question 10 (a)				
... responsible for administrative costs ...				
a. high school system	50.0	28.6	46.2	41.0
b. college system	50.0	71.4	53.8	59.0

(a) n = 12 High School, n = 14 Community College, n = 13 University
n = 39 Total Responses

Marginal Notes and Comments

In the initial data analysis, only those questions clearly marked and only one answer per question were considered. For all percentages, Chi-squares, Phi Coefficients and all other tabulations, this procedure was strictly followed. If two answers were marked, the question was treated as an unanswered question. As the responses were tabulated, the researcher noticed and appreciated many marginal notes and comments. These marginal notes have also been tabulated, not to be used as "hard data" but as possible future considerations. Of the forty-five G.A.Q.'s received, seventeen - 37.7%, had at least one margin notation. The number of marginal responses collected from university instructors was by far the highest, 53.3% (See Table 12). English instructors were more likely to make a marginal note (Table 13) than were mathematics instructors.

Of the individual questions on the G.A.Q., (Table 14) 22.6% made a marginal note for question ten . . . administrative costs. . . . Question two . . . beneficial to students . . . with five marginal notes was usually answered "Yes, but" and then a qualification was added. Question four had four marginal notes. Question four dealt with attitudes concerning who was to determine the eligibility of the student. The four marginal notes made were not at all similar and did not show a unified trend or implications. Question number five also had four marginal notes. This question dealt with the appropriate setting for an advanced placement course.

Table 12

. . . Marginal Notes and Comments Grouped by Institutional Responses on the G.A.Q. . . .

	% High School Marginal Responses	% Community Marginal Responses	% University Marginal Responses	% Total Marginal Responses
(a)	26.7	33.3	53.3	37.8

(a) n = 15 High School, n = 15 Community College, n = 15 University
n = 45 Total Responses

Table 13

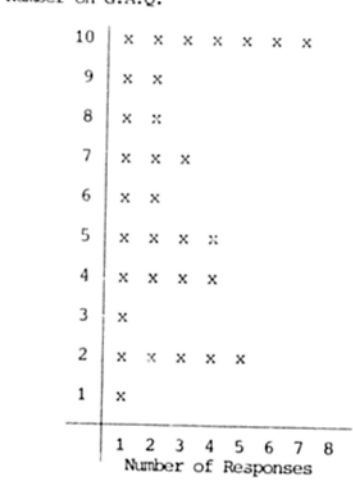
. . . Marginal Notes and Comments Grouped by Discipline on the G.A.Q. . . .

	% English Instructors Marginal Responses	% Mathematics Instructors Marginal Responses
(a)	45.5	30.4

(a) n = 22 English Instructor Responses
n = 23 Mathematics Instructor Responses

Table 14

. . . Distribution of Marginal Notes Pertaining to Specific Questions on the G.A.Q. . . .



These four marginal notes dealt with wording of the question more than explanation or comment on the question. These marginal notes indicate the complexity of this problem and also an interest in the subject. They were appreciated by the researcher.

Questionnaire Return Rate

The purpose of this study was not to compare the rate at which each group returned the completed questionnaires. However as these data were collected it appeared that certain groups were more likely to respond than others (See Table 15). These responses suggest several things about the groups themselves and educational research. The high school group was the quickest to reply. Within fourteen days 93.8% of polled instructors had replied. The university group was also very quick to reply with 87.5% of the questionnaires returned within fourteen calendar days. The slowest group to respond was the community college instructors with 68.8% after fourteen calendar days. Of these, the mathematics instructors employed by the community colleges had only 50.0% returned after fourteen days.

Due to the sample size these data, concerned with return rate, were not conclusive, but several reasons might suggest this difference in response rate. The data collected was not used specifically to measure how certain groups return questionnaires. These trends do show a need for further research beyond the design of this project. The following paragraphs imply certain trends and implications noted by this

Table 15

Original Mailing Return Rate on the G.A.Q.
(% Received After Fourteen Calendar Days)

	% of Return	Number of Responses
High School:		
English	87.5	7 of 8
Mathematics	100.0	8 of 8
Total	93.8	15 of 16
Community College:		
English	87.5	7 of 8
Mathematics	50.0	4 of 8
Total	68.8	11 of 16
University:		
English	75.0	6 of 8
Mathematics	100.0	8 of 8
Total	87.5	14 of 16

project.

Since the cover letter stated that the research was being conducted by a teacher, the high school instructors might be more inclined to answer to help a fellow teacher in a research project. The high school instructors are presently working with the gifted high school students that would be directly affected by any future changes. This direct contact with the high school gifted student might encourage a quick response.

The university instructors were selected from each college catalogue and were designated as head of a department or else chairperson of a department. This selection collected data from instructors who are policy makers within their individual institutions. These instructors might be more aware of trends and policies in other states and institutions concerning gifted students. The university instructors, because of their own personal experiences, might be more sympathetic to research projects and problems than community college instructors or the high school instructors. These points mentioned might indicate a rapid response to a questionnaire from the university instructors questioned.

The community college instructors are not daily exposed to the gifted high school students. They might have had less experiences or even unfavorable experiences with research data and might not be sympathetic to educational research in general. These points suggest the lowest response rate. With only forty-eight possible responses, each response is valued at over two percent of the total project. It must be kept in

mind that these responses are suggested only for thought and future investigation. With such a small sample, no definite conclusions concerning the return rate can be drawn.

Summary of Data Analysis

All data collected was obtained from a ten item mailed questionnaire. These responses were obtained from fifteen high school instructors, fifteen community college instructors and fifteen university instructors. These forty five G.A.Q.'s represented 93.8% of the total mailing. The data collected used percentages rounded to the nearest tenth of one percent. The Chi-square and Phi Coefficient tabulations of questions two, five, seven and ten were carried to the nearest third decimal place. Question two dealing with . . . beneficial to student . . . provided a very positive response with 97.7% of the responses indicated "yes, a student would benefit by such a program". Questions two, five and seven were used to determine feasibility and appropriateness of the setting and the instructor. The attitudes concerned with setting, community college or university, showed no significant preference by discipline but did show a significant preference correlated with institution of employment.

Distance was a factor effecting attitudes of instructors. The attitudes dealing with the maximum mean distance to be traveled was 20.7 miles one way. A multiple criteria for selection of the students was the preferred answer pertaining to eligibility of the gifted high school students. The attitude responses showed that the high school personnel were

better qualified to make the student selection. 67.4% of responses indicated this fact. After completion of the course, 44.2% of those responding indicated that the credits should be used for both high school diploma requirements and also degree requirements. The attitude responses indicated that the college system (59.0%) should be responsible for administrative costs. 41.0% felt that the high school system should be responsible for these administrative costs.

The high number of marginal notes, 37.7% of those responding, indicated the interest in this subject area. The questionnaire return rate was also considered for trends varying with the institutional settings of the instructors. Although these data were not the purpose of the project, they were included to show the interest and variety by institutional setting.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

The attitudes of high school, community college and university instructors in the fields of English and mathematics were surveyed in this research. Results of this project suggested a need for change and also suggested the complexity of the problem. More research in this area is needed before the educational community can adapt to these needed changes.

The instrument used was a ten item multiple choice mailed questionnaire referred to as the Gifted Attitude Questionnaire. This G.A.Q. accessed attitudes concerning the feasibility and appropriateness of college level experiences for academically gifted high school students. These attitudes were collected from high school, community college and university instructors. These instructors were all employed by public institutions in the Commonwealth of Kentucky. The three levels of instruction were also compared to the specific disciplines of mathematics and English. By using the Chi-square and Phi Coefficient tabulations it was found that the only significant positive correlation concerned attitudes dealing with appropriate setting. The responses were significant at the .05 level with a positive Phi Coefficient

of .596. These data indicated that instructor responses depended upon the instructor's institution of employment rather than the discipline of instruction. Instructor attitudes concerning distance to the college experience, eligibility of the students, personnel to determine eligibility, use of earned credit and responsibility of administrative costs were also investigated with the use of the G.A.Q.

The "shadow politic" (Durden, 1985) mentioned in the literature review is a very real problem. This "shadow politic" deals with the degree of respect the American public has for different levels of instruction. A real interest in gifted high school placement will develop because of national trends in gifted education. Other research is needed in this area. The sample in this study was limited to forty-five responses from public institutions in the Commonwealth of Kentucky. Of the forty-one responses collected by mail 75.6% wanted a summary of the study and 41.5% added some type of comment as a margin note or short discussion. These facts indicated an interest in or a concern for this topic.

The results of this research and other research publications suggested that attitudes of instructors indicated that gifted high school students would benefit from a college level experience. These data were quite definitive. The real problem is how to provide this experience. All changes of such magnitude in our American educational system are going to be difficult. College programs for gifted high school students

will become more widespread in the future. The problems of costs, eligibility, instructors, transportation, use of credit, location of facilities will all be overcome because a real need exists; and the people involved are more committed to students than to an established system. The research data, tabulated by use of the G.A.Q., indicated that the surveyed attitude responses of high school, community college and university instructors were answered as definite groups. The disciplines of mathematics and English showed little difference compared to the institution of employment. The groups of instructors i.e. high school, community college and university answered generally as three distinct groups.

Results of this project suggest several trends now appearing in gifted education. Academically gifted high school students have a real need to advance at their own rate. These groups of students identified as gifted have shown in several programs that the work is appropriate to their ability. The set pattern of K-12, college, graduate work is not meeting the needs of our most talented students. The limiting organizational system of our present educational institutions must change to meet the needs of our most talented students. Results of this study suggested that those Kentucky instructors that will be most influential in these changes feel that a college experience for an academically gifted high school student would be beneficial. Use of earned credit, distance to the experience, administrative costs, appropriate setting and appropriate instructors will be a difficult issue

to handle. Our society, as a member of a highly competitive world, cannot afford to have our most talented young people working at less than their potential or at a rate slower than their development dictates.

APPENDIX

APPENDIX A

ATTITUDES OF INSTRUCTORS CONCERNING EARLY PLACEMENT OF GIFTED HIGH SCHOOL STUDENTS

Please circle the answer which best expresses your opinion. Please assume the questionnaire is for your discipline.

1. My present position would most accurately be called an instructor in:

   a. high school English
   b. high school mathematics
   c. community college English
   d. community college mathematics
   e. university English
   f. university mathematics

2. In your opinion, would a gifted high school student benefit from a college level academic experience before graduation from high school?

   Yes No

3. Should the gifted high school student's eligibility to participate in college level courses while matriculating in high school be based on:

   a. grades
   b. recommendation of high school instructors
   c. standardized test scores (e.g. ACT, SAT)
   d. personal interview
   e. all of above

4. Who is better qualified to determine the eligibility of gifted high school students to enroll in advanced placement courses?

   a. the high school personnel
   b. the college personnel offering the course

5. Which <u>one</u> of the following institutions would be the most appropriate setting to offer an advanced placement course?

   a. community college
   b. university

6. Upon satisfactory completion of a college level course by a gifted high school student, should the credits earned in the course be applied to:

   a. high school diploma requirements
   b. college degree requirements
   c. both high school diploma and degree requirements
   d. student's choice

7. Assuming there would be a sufficient number of gifted high school students to justify offering an advanced placement course for college credit, who is most appropriate to teach the course?

   a. qualified high school instructor
   b. qualified college instructor
   c. either would be equally appropriate

8. Do you believe that the distance of the high school student's residence from the community college or the university is a factor in determining appropriateness of the high school student taking a college level course?

   Yes No

9. In your opinion, what is the maximum distance in miles for routinely traveling one way that would make college work for the high school student still feasible.

   0 - 5

   6 - 10

   11 - 15

   16 - 20

   21 - 25

   more than 25 but less than 50

   more than 50 miles

10. Assuming there would be a sufficient number of gifted high school students to justify advanced placement course for college credit, which organization should be responsible for administrative costs?

    a. high school system
    b. college system

_____ Yes, I would like a copy of the research summary.

_____
NAME

APPENDIX B

R-3 Blueball Church Rd.
Elizabethtown, KY 42701
November 20, 1986

Dear Educator:

I am a teacher of Gifted and Talented students presently working on an Educational Specialist Project at Western Kentucky University. My project deals with early experience, at the college level, for those high school students identified as academically gifted.

I am presently collecting information from educators working in high schools, community colleges and the four-year university setting. Your response will be compiled with others and the information will be statistically examined. At no time will your name or school be associated with your response. With this in mind, please complete the enclosed questionnaire and return in the enclosed stamped envelope in the next mail. The questionnaire contains only ten items, all of which call for catagorical responses. The instrument can be completed in three minutes.

Without your help this project would be impossible. Due to the limited sample size, your response is critical to the project. In advance I would like to thank you for your response and will gladly mail a summary of my results. If you would fill in your name on the space provided on the questionnaire, I will post the results as soon as possible.

Thank you,

Bruce W. Vickers

Stephen B. Schnacke, Ed. D.
Educational Specialist Project
Chairperson

APPENDIX C

R-3 Blueball Church Road
Elizabethtown, KY 42701
December 3, 1986

Dear Educator:

On November 17, 1986 I posted a letter and a questionnaire to you concerning my Educational Specialist Project. As of December 3, 1986 I have not received the information. Because of the limited sample, your response is critical to this project. Your responses will be used statistically and will never be associated with you or your school.

I hope you and your family enjoy the holiday season. I will certainly enjoy mine more when I receive the enclosed questionnaire.

Thank you,

Bruce W. Vickers

APPENDIX D

TELEPHONE FOLLOW-UP (FEMALE)
December 15 - 18, 1986

Mr., Ms., Mrs., Dr., _____,

I am calling about a research project for Bruce Vickers, a Western Kentucky University graduate student.

If you will kindly answer nine short questions over the phone, the research data would be more complete. Your response is very important to this study. This will take a very short time.

*Things to note while telephoning:

1. Pretend you do not understand any questions.
2. Read questions exactly as stated.
3. Only one answer per question.
4. Thank you.

BIBLIOGRAPHY

Advanced Placement Program, National Summary Reports (1984).

Anderson, Ruth B. (1979) Rural education for the gifted: Activities at the University of Maine at Presque Isle. Dallas, TX: Presented convention, the council for exceptional children.

Beard, John E. (1977) Gifted and talented guide book.

Benbow, Camella P., and Minor, Lola Z. (1986) Mathematically talented males and females and achievement in the high school sciences. American Educational Research Journal, 21(6), 425-436.

Calabrese, R. L., and Anderson, R. E. (1986) The public school: A source of stress and alienation among female teachers. Urban Education, 21(1), 30-41.

Clark, Barbara. (1983) Growing up gifted. Columbus, OH: Charles E. Merrill Publishing Co.

CLEP (1985) College administrators' workshop.

College Placement and Credit by Examination. (1978) Guide to institutional policies, advanced placement program.

Correll, Marsha M. (1978) Teaching the gifted and talented, fastback 119. Bloomington, IN: Phi Delta Kappa.

Daly, William T. (1985) New directions for teaching and learning, 24, 121-123.

Dickey, Edwin M. (1986) A comparison of advanced placement and college students on a calculus achievement test. Journal for Research in Mathematics Education,17(2), 140-144.

Doughty, Earl Jr. (1965) Characteristic differences between pupils identified as gifted and non-gifted. Southern Illinois University: Dissertation.

Durden, William G. (1985) Early instruction by the college: Johns Hopkin's Center for the talented youth. New directions for teaching and learning,24, 37-46.

Gaines, Bette C. (1985) Early instruction in the high school:

Syracuse's project advance. New directions for teaching and learning,24, 27-36.

Gallagher, J. (1966) Research summary on gifted child education. Springfield, Ill.: Office of the Superintendent of Public Instruction.

Gregory, Donnelly Atkinson. (1979) An instruction process for intellectually gifted students in grades three through six. University of Maryland: Dissertation.

Guskey, Thomas R. (1986) Staff development and the process of teacher change. Educational Researcher,15(5), 5-12.

Gutkin, Terry B. (1986) Perceptions of variables relating to the outcomes of school-based consultation interviews. School Psychology Review, 15(13), 375-382.

Kentucky Department of Education (1984) Guidelines: Kentucky gifted education programs, revised.

Labuda, Michael (1968) Meeting the reading needs of gifted children in the elementary school. University of Idaho: Dissertation.

Milne, A. A. (1926) Winnie-the-Pooh. New York: American Book-Stratford Press, Inc.

Modu, Christopher C. and Wimmers, Eric (1981) The validity of the advanced placement English language and composition examination. College English,43(6), 609-620.

Nadel, Sybil (1978) The education of gifted and talented - a basic overview. New Jersey State Department of Education.

National Association of Independent Schools, NAIS (1978) Teaching the gifted and talented in the regular classroom. Occasional paper, NAIS academic committee. Boston, MA.

Perlini, Ernest L. (1978) Developing a schoolwide enrichment activity program for identified gifted students. Nova University: Introductory practicum.

Peters, Diana (1978) An individualized education plan (ICEP) for the gifted child.

Richardson, Mary W. (1978) Educational usefulness of the advanced placement English course in New York state.

Richmond, Richard F. (1981) Comp. 1981 curriculum reports. Florida Institute of Technology.

Stanley, Julian C. (1976) Test better finder of great math

talent than teachers are. Psychology in action,31(4).

Stanley, Julian C. and Benbow, Camilla P. (1982) Educating mathematically precocious youths: Twelve policy recommendations. Educational Researcher,11(5), 5-9.

Stanley, J. C. (1985) Young entrants to college: How did they fare? College and University,60(3), 219-228.

Stanley, Julian C. (1986) High school biology, chemistry, or physics learned well in three weeks. Journal of Research in Science Teaching,23(3), 237-250.

Sternberg, R. J. and Davidson, J. E. (1986) Conceptions of giftedness. New York: Cambridge University Press.

Terman, L. (1925) Mental and physical traits of a thousand gifted children. In L. Terman (Ed.), Genetic studies of genius (Vol. 1). Stanford: Stanford University Press.

The College Board (1978) College placement and credit by examination: 1978 guide to institutional policies.

The College Board (1986) College board advanced placement program. AP Yearbook.